

stock was swept away; schooner H. I. Patter was totally wrecked at Five-mile Beach, and two of crew drowned; schooner Sarah Clark totally wrecked near Peck's Beach, four of crew lost; numerous other vessels also went ashore; Barnegat SE. 72 and Atlantic City E. 56 were the maximum velocities registered. The storm-centre passed into the State of New York about noon, and thence over New England during latter part of day and morning of 24th. Its severity somewhat modified as it moved eastward, but the following maximum velocities, occurring on the 23rd, will be found interesting: New York, 7 a. m., 50, continuing for several hours; considerable damage in vicinity. New Haven, 11 a. m., E. 40; storm very severe; schooner Mary Tyce wrecked; 2 lives lost. New London, E. 60; severest storm in 40 years. Newport, SE. 36. Boston, SE., 40. Portland, 9 p. m., anemometer cups blown away; estimated velocity afterwards 70 miles. Oswego, 29. Rochester, 2:30 p. m., N. 28. Erie, 32; schooner totally wrecked. Cleveland, NW. 35. Very high tides occurred along the New England coast, and much damage resulted thereby to wharves and shipping. On the summit of Mt. Washington, at 4:57 p. m. of 23rd, the wind reached a velocity of 120 miles from SE. Cautionary Signals were ordered up at midnight of the 20th at Key West; at noon of the 21st from Jacksonville to Charleston; during the afternoon and at midnight of the 21st from Smithville to Kittyhawk; during the 22d from Cape Henry to Boston, and on the morning of the 23d at Portland and Eastport; as the storm-vortex moved northward these signals were changed to Cautionary Off-shore Signals northward to New York, and both sets of signals were fully justified. Cautionary Signals were also ordered up on the Lakes, from Alpena to Sandusky, at midnight of the 21st, and thence to Oswego during the 22nd, and were justified along the Lower Lakes, as already seen.

No XII—possibly developed during the afternoon of the 23rd in Wyoming and Colorado—barometers at Cheyenne and Denver 29.78 and 29.80, respectively, or 0.30 below normal—and moved southward, in advance of high pressure area No. VII, to Indian Territory, where it was apparently central, with rising pressure, during the 24th. 25th, it moved northeastward to the Lower Lakes, but with pressure above the normal, and it would be more correct to consider it as merely a depression existing between the high areas Nos. VII and VIII than as a low pressure area; northerly winds, cloudy weather and light rains prevailed from Missouri to Michigan. 26th, the lowest pressure, still, however, above the normal, continued in the Ohio valley and Lower Lake region, accompanied by cloudy and rainy, cool weather. 27th, it moved northeastward down the St. Lawrence valley, with pressure slightly below the normal and cloudy and rainy, cool weather from Lake Ontario to the Middle and East Atlantic coast and Lower Canada.

No. XIII—appeared in the Northwest on the 27th, accompanied by snow and sleet in Montana and Dakota. 28th, was central over the Northwest, preceded over the Lake region by cool southerly winds, cloudy weather and light snow or sleet. 29th, remained central in the Northwest, but was preceded by falling barometer, southerly or easterly winds, cloudy and rainy, cool weather thence to the Lake region, Middle and South Atlantic and Gulf States. 30th, it moved eastward over the Lake region, and cool, cloudy and rainy weather prevailed east of the Mississippi, generally clearing away south of the Ohio valley by midnight; cool northwest winds and snow prevailed, during latter part of day, over the Upper Lakes. 31st, it moved eastward to the Gulf of St. Lawrence; cloudy and rainy weather prevailed in the northern portion of the Middle States and in New England, and cold north to west winds, with snow, in Lake region and Ohio valley, clearing away over western portions by night.

No. XIV—appeared in Manitoba on the 31st, but its subsequent history belongs to the November REVIEW.

INTERNATIONAL METEOROLOGY.

The following miscellaneous notes relative to storms at sea do not include the numerous reports that have been made use of in locating the path of storm on chart No. I:

May 25th, 8° 49' S., 30° 47' W., heavy S. gale.

July 2d, off Algoa Bay, heavy NW. gale, lasting until the 17th. 18th, 19th and 20th, 35° 40' S., 165° 10' W., heavy cyclone. 24th, 35° S., 24° 30' E., heavy NW. gale, lasting twenty-four hours.

August 12th, off Cape of Good Hope, strong W'ly gales; 18th, same position, heavy gales. 20th, 14° 14' S., 74° 23' E., very heavy weather from SE. 26th, 28° N., 72° W., severe hurricane from SW. to NW. 27th, 30° 30' N., 69° W., hurricane increasing to cyclone and continuing to 4 a. m. of 28th; 30° 09' N., 70° 30' W., hurricane. 28th, 33° N., 65° W., hurricane from SE, veered round to NW.; 33° 40' N., 64° W., hurricane; Brig "Echo," spoken Aug. 31st in 32° N. 61' W., from Baltimore, reported hurricane August 28th. 29th, 32° 57' N., 60° 37' N., severe hurricane.

September 4th, 40 miles south of Guantanamo, Cuba, hurricane. 7th, off Guantanamo, Cuba, terrific gale and heavy sea, lasting 24 hours. 8th, Off Riding Rocks, Bahama Banks, hurricane; 43° N. 46° W. a. m., heavy cross-seas,—3 p. m., E. to NNW., perfect hurricane,—midnight, almost calm, sea mountains high,—9th, 1 a. m., wind from N. with redoubled force,—11th, noon, 40° N. 40° W., weather moderate, vessel abandoned; 53° 54' N. 31° 46' W., sails carried away in fresh breeze. 11th, 29° 40' N., 80° 40' W., at 4 a. m., brig Sally Brown passed, dismantled and waterlogged, sea making a clean breast over her; 120 miles S. of Cape Hatteras, hurricane. 12th, 14° 43' N. 58° 55' W., heavy hurricane from NNW. veering round to SW. 13th, 19° 20' N. 54° 40' W., heavy gale; Santa Anna, Mexico, gale, in which two barks and two schooners were driven ashore and became total wrecks. Brig Mary Knowlton, from Pernambuco, August 24, to New York, October 7, reported September 13th heavy SE. gale, lasting until the 16th, when took hurricane from NNW. with heavy seas, lasting until 18th. 15th, 60° 10' N. 10° W., cyclone lasting 9 hours,

barométer 27.70. 16th, 21° 19' N. 58° 30' W., severe hurricane lasting through 17th. 17th, 13° 32' N. 111° 20' W., hurricane from W. to SE., lasting 16 hours; 26° 18' N. 58° 40' W., hurricane from SW., lasting 9 hours; brig Bogota reported September 16th to 18th from 21° 17' N. to 23° 38' N. and 57° 14' W. to 59° 05' W., heavy gales; schooner Marion Gage, spoken September 22 in 26° 20' N. 60° 10' W., from Philadelphia, reported hurricane September 17th; on the banks of Newfoundland, hurricane from NE., lasting 24 hours. 21st, 49° 57' N. 11° 23' W., strong variable winds, rain, high westerly sea. 22d, off Sable Island, heavy NE. gale, lasting 48 hours; 50° 12' N. 17. 36' W., strong variable winds and squalls, high westerly sea; 49° 47' N. 6° 23' W., stiff SW. breeze, high westerly sea. 23d, 50° 04' N. 23° 25' W., fresh NW. breeze and rain; 51° 26' N. 13° 53' W., moderate northerly gale; 51° 36' N. 13° 04' W., fresh NW. gale, cloudy, heavy W. sea; 49° 47' N. 12° 33' W., stiff NW. breeze, high W. sea. 24th, 49° 27' N., 19° 34' W., stiff NNW. breeze, high W. sea; 51° 28' N., 19° 21' W., strong NW. gale, cloudy, high W. sea. 25th, 49° 39' N., 29° 37' W., high sea; 48° 57' N., 26° 21' W., stiff NNW. breeze, high W. sea; 51° 25' N., 25° 32' W., strong NW. gale, clear weather, very high W. sea. 26th, 48° 16' N., 33° 32' W., decreasing WSW. wind and sea; 49° 57' N., 14° 03' W., high W'ly swell. 27th, 49° 57' N., 22° 02' W., high NW. swell; 49° 37' N., 39° 25' W., heavy W. sea; 47° 19' N., 40° 12' W., high W'ly sea; off Grand Bank, N'rd, heavy N. gale. 28th, 10° N., 116° W., hurricane from WNW., veering to ENE., lasting 36 hours; 44° 58' N., 51° 53' W., strong NW. winds and hard squalls; 48° 08' N., 46° 37' W., moderate W. to SW., winds, squally, heavy NE. swell; 49° 54' N., 29° 54' W., fresh WSW. to WNW. breezes, squally, rough sea. 29th, 49° 34' N., 16° 09' W., WNW., squally; 49° 59' N., 20° 30' W., strong SW. breeze, high W. sea; 50° 55' N., 29° 56' W., strong WSW. breeze, heavy W. sea; 49° 22' N., 37° 16' W., strong NW. to SW. gale, w'ly sea; 48° 22' N., 51° 31' W., moderate NW'ly gale; 46° 20' N., 52° 16' W., strong NW. gale, equally, high W. sea; 44° 46' N., 53° 20' W., NNW., stormy, high sea; 42° 18' N., 56° 15' W., moderate NW. gale, hard squalls; 33° 44' N., 50° 55' W., gale; steamer Lepanto, at Hull, October 13th, from New York, reported, September 29th, heavy gale from NW., with tremendous N'ly sea, — October 1st, longitude 53° 30' W., high seas, — 2nd, took NW. gale, which continued until vessel arrived at Southampton. 30th, 49° 18' N., 16° 22' W., W. squally; 46° 09' N., 21° 30' W., SW. squally; 49° 50' N., 26° 41' W., strong SW. breeze, high W. sea; 49° 36' N., 36° 51' W., strong WSW. breeze, heavy W. sea; 48° 19' N., 43° 15' W., heavy WNW. gale, squally, increasing sea; 42° 52' N., 55° 52' W., moderate NW'ly gale; 44° 10' N., 56° 20' W., heavy NNW. gale, fierce squalls, very high W. sea.

October 1st, Buenos Ayres, four vessels driven ashore and some thirty lives lost during violent storm; 48° 42' N., 23° 49' W., strong W'ly breeze and heavy sea; 48° 40' N., 27° 34' W., SW., squally; 49° 09' N., 33° 12' W., strong WNW. breeze with heavy squalls; 48° 12' N., 42° 45' W., fresh W'ly gale, heavy W. sea; 46° 30' N., 49° 31' W., NW. stormy, heavy rain showers. Another cyclone visited the south coast of Hayti, during which an American brigantine was wrecked at Tiburon and all hands lost. 2nd, 48° 18' N., 31° 26' W., strong SSW. breeze and heavy sea; 47° 59' N., 33° 19' W., strong W., unsteady wind, with squalls; 50° 32' N., 36° 44' W., strong S. breeze, squally, heavy cross sea; 48° 12' N., 39° 20' W., strong WNW. breeze, with heavy squalls; 47° 46' N., 46° 25' W., NW. gale in morning, with passing showers; 46° 20' N., 48° 57' W., strong N'ly breeze and squally. 3d, 51° 29' N., 14° 35' W., S. by W., squally; 47° 10' N., 38° 25' W., stormy weather from WNW.; 46° 46' N., 38° 25' W., W. to NW. by N., strong wind, heavy squalls, increasing to strong gale, squalls and high sea; 47° 10' N., 44° 52' W., strong WNW. breeze with heavy squalls; 48° 52' N., 45° 26' W., long, heavy swell from NE.; 42° 30' N., 48° W., N'ly gale and tremendous sea, lasting until the 4th. 4th, 51° 12' N., 22° 16' W. SW., squally with rain; 45° 52' N., 42° 16' W., strong NW. to N. gale and high sea; 45° 03' N., 44° 26' W., NW. continued storm, squally; 45° 52' N., 47° 26' W., strong NW. gale and confused sea; about 45° N., 50° W., heavy NE. gale and sea lasting 24 hours; 45° 52' N., 52° 30' W., strong WNW. breeze with heavy squalls. 5th, 51° 26' N., 15° 05' W., S'ly squalls; 50° 24' N., 30° 23' W., S. and NE. fresh breezes, squally and rain. 6th, 49° 47' N., 6° 23' W., WSW. squalls; 50° 19' N., 29° 47' W., moderate NNW. gale; 49° 0' N., 37° 30' W., fresh N'ly breeze, squally; 59° N., 50° 50' W., hurricane from E. to N., lasting 8 hours; 7th, 49° 58' N., 13° 30' W., strong SW. breeze, high westerly sea; 51° 25' N., 14° 53' W., SW., squally; 51° 13' N., 15° 39' W., NW. to SW. gale, heavy seas, rain; 50° 03' N., 21° 31' W., moderate N. gale; about 47° 36' N., 30° 14' W., heavy gale and seas; 38° 02' N., 35° W., terrific cyclone from SE. by W. to N., barometer 28.02, — 8th 4 a. m. sea terribly confused, — 6 a. m., terrific hurricane, ocean one sheet of foam, — 10 a. m., moderating, — 4 p. m., heavy gale; 48° 54' N., 36° 07' W., strong gale and high sea; 48° 00' N., 36° 10' W., SE. hurricane, very high sea, lasting 8 hours; 47° N., 36° W., heavy SW. gale; 49° 57' N., 33° 41' W., noon, barometer 29.80, SE., force 3, — 4 p. m., barometer 29.54, SE., 4, — 8 p. m., 29.01, ESE., 6, — 10 p. m., 28.65, E., 10, fierce gale, terrific squalls, — midnight, 28.72, ENE., 11, very heavy gale, hurricane squalls, — 8th, 4 a. m., 29.25, NE., 10, heavy gale, fierce squalls, — noon, 48° 16' N., 42.27, W., 29.85, N., 8, fresh gale, hard squalls, heavy NE. sea; 44° N., 40° W., hurricane from SSE. to SW. lasting six hours; 44° N., 42° W., heavy SW. gale, barometer, 28.82; 44° 21' N., 42° 13' W., hurricane; 44° 21' N., 42° 13' W., hurricane; 44° N., 44° W., cyclone and heavy gale from SW. to NW., lasting twelve hours; 47° 24' N., 44° 04' W., strong ESE. gale; rain and high sea; 44° N., 46° W., cyclone from SE. to NW., lasting nine hours, — barometer at noon 28.70; 44° 20' N., 48° W., very heavy gale, barometer, 28.20; 45° 30' N., 49° 52' W., heavy gale; 40° 30' N., 50° 40' W., hurricane from ESE. to SSE., lasting five hours; 40° 31' N., 50° 40' W., hurricane from ESE. to WNW., with terrific sea; 41° 30' N., 56° W. hurricane from ESE. to NNW., lasting sixteen hours; steamer "Somerset," Bristol, October 2d to New York 15th, reported, October 7th, heavy gale from SE., with heavy cross-sea, increasing to hurricane, lasting eight hours and suddenly shifting to NW. and N., — October 13th,

was between Sable Island and George's Shoals; ship "Lennie," Belfast, September 30th, to New York, October 30th, reported, October 7th, heavy SE. gale, veering to NW. and increasing to perfect hurricane, barometer, 28.30. 8th, 49° 22' N. 18° 55' W., strong NW. wind and high sea; 50° 21' N., 20° 40' W., moderate NW. to SW. gale, heavy westerly sea; 50° 51' N., 20° 40' W., NW., strong gale, high sea; 51° 13' N., 22° 17' W., strong to hard N. and NW. gale, very heavy seas; 54° 07' N., 22° 26' W., N. squally, heavy sea; 49° 42' N., 26° 30' W., heavy SW. to NW. gale and dangerous sea; 47° N., 40° W., hurricane from SE., barometer, 28.35; 46° 10' N., 23° W., hurricane from ESE., lasting 12 hours, then heavy gale from ENE., lasting eighteen hours, very high sea; 45° 30' N., 39° W., NE. hurricane lasting twelve hours, very high sea; 49° 16' N., 41° 08' W., strong NE. gale, veering to NNW; 47° 19' N., 41° 18' W., strong northerly gale, high sea; 48° 16' N., 42° 27' W., fierce NE. to SE. gale and high sea; 45° 19' N., 50° 49' W., NE. whole gale, high sea; 44° 37' N., 54° 32' W., SE. and NE., stormy, heavy rains; British Isles, severe storm, 7th to 9th, lowest barometer 28.75 to north of Ireland on the 8th. 9th, 49° 41' N., 5° 22' W., WSW. gales, very rough sea, heavy rains; 49° 22' N., 23° 06' W., strong SW. to NW. gale, with hurricane-like squalls; 50° 10' N., 24° 57' W., strong SW. gales and high seas; 49° 03' N., 25° 20' W., heavy SW. to N. gale, high sea; 51° 26' N., 28° 22' W., increasing NW. gale, terrible sea; 52° 50' N., 29° 10' W., fresh NE. to NW. gale, very high sea; 49° 16' N., 28° 03' W., a. m., heavy NNW. gale and dangerous sea; 49° N., 39° W., gale with terrific sea; 45° 56' N., 47° 38' W., rain; 44° 30' N. 54° W., midnight 8th to 9th, thunderstorm; 46° 23' N., 51° 02' W., fresh gale and high sea; 50° N., 51° W., hurricane, lasting twelve hours; bark "Consul Platen" was dismantled and water-logged October 9th and abandoned October 13th in 49° 04' N., 16° 07' W. 10th, 49° 45' N., 10° 28' W., westerly gales, heavy thunderstorms with "immense" rains; 51° 15' N., 11° 51' W., fresh NW. gale and high sea; 48° 36' N., 27° 53' W., NW. and SW., wild breaking sea; 49° 16' N., 30° 46' W., strong SW. gale and high sea; 48° 18' N., 31° 55' W., moderate SW. gale; 48° 22' N., 32° 37' W., heavy seas, SE. wind and rain; 48° N., 32° W., severe gale; 51° N., 36° 12' W., fresh S. and SW. gales; 44° 47' N., 52° 50' W., strong N'y gale; 42° 19' N., 62° 49' W., fresh W'y gale, heavy sea; 41° 06' N., 66° 58' W., SW and NW., stormy, heavy W. sea; 200 miles E. of Sandy Hook, hurricane from NE., lasting twenty-four hours; off George's Shoals, hurricane from NNE. to NW., lasting twenty-four hours.

TEMPERATURE OF THE AIR.

The isothermal lines on chart No. II illustrate the general distribution of the temperature of the air for the month. By reference to the table, on the left-side of chart, it will be seen that the temperature has been above the average in the Southwest and for all districts east of the Mississippi river. In the Northeast the excess is from four to five degrees, and gradually diminishes south and westward; in the Northwest, and thence to the Pacific, it is below the average, especially in the Rocky Mountain region. The comparison for last section is not obtainable, owing to the reports from Pike's Peak not having come to hand, but the deficiency varies from 0°.4 at Santa Fé, to 8°.0 at Salt Lake City.

Minimum and Maximum Temperatures, respectively: *Maine*—Orono 24° and 72°; Mechanics' Falls, 25°, 75°; Eastport, 29°, 68°. *New Hampshire*—Mt. Washington, 10°, 54°; Dunbarton, 17°, 79°. *Vermont*—Newport, 27°, 76°; Burlington, 32°, 76°. *Massachusetts*—Westborough, 25°, 78°; Boston, 33°, 79°. *Rhode Island*—Ft. Adams, 41°, 76°; Newport, 36°, 76°. *Connecticut*—Colebrook, 24°, 78°; Mystic, 36°, 84°. *New York*—Waterburg, 23°, 79°; Schroon Lake, 32°, 84°; New York City, 39°, 78°. *New Jersey*—Somerville, 28°, 79°; Jersey City, 40°, 84°. *Pennsylvania*—Franklin, 20°, 74°; Philadelphia, 38°, 80°; Pittsburg, 28°, 84°. *Delaware*—Dover, 36°, 78°. *Maryland*—Woodstock, 25°, 78°; Emory Grove, 48°, 89°; Baltimore, 35°, 80°. *District of Columbia*—Washington, 30° 81°. *Virginia*—Wytheville, 22°, 77°; Johnstown, 41°, 84°. *West Virginia*—Helvetia, 27°, 77°; Morgantown, 27°, 80°. *North Carolina*—Murphy, 22°, 79°; Wilmington, 40° 86°. *South Carolina*—Aiken, 42°, 82°; Charleston, 44° 84°. *Georgia*—McPherson Barracks, 31°, 88°; Atlanta, 35°, 80°; Forsyth, 42°, 90°. *Florida*—Milton, 38°, 86°; Houston, 47°, 90°; Key West, 66°, 90°. *Alabama*—Montgomery, 38°, 86°; Mobile, 42°, 89°. *Mississippi*—Brookhaven, 44°, 86°; Fayette, 37°, 86°. *Louisiana*—Okalooska, 37°, 83°; Shreveport, 38° 90°; New Orleans, 49°, 87°. *Texas*—Fort McKavett, 28°, 98°; Concho, 32°, 93°; Laredo, 44°, 97°; Uvalde, 32°, 102°; Galveston, 50°, 87°. *Ohio*—Bellefontaine, 20°, 80°; Cincinnati, 30°, 82°; Columbus, 26° 81°; Cleveland, 29°, 80°. *Kentucky*—Danville, 24°, 85°; Louisville, 27°, 83°. *Tennessee*—Clarksville, 25°, 84°; Nashville, 30°, 84°. *Arkansas*—Mt. Ida, 24°, 84°; Judsonia, 36°, 84°. *Michigan*—Escanaba, 17°, 69°; Marquette, 18°, 78°; Detroit, 24°, 79°; Grand Haven, 30°, 77°. *Indiana*—Spiceland, 18°, 79°; Ft. Wayne, 27°, 85°; Indianapolis, 23°, 81°. *Illinois*—Riley, 17°, 78°; Cairo, 28°, 81°; Louisville, 25°, 90°; Chicago, 27°, 79°. *Missouri*—Oregon, 12°, 88°; St. Louis, 26°, 85°; Ashley, 20°, 84°. *Kansas*—Dodge City, 10°, 88°; Topeka, 15°, 93°; Leavenworth, 20°, 86°. *Wisconsin*—Neillsville, 17°, 73°; La Crosse, 22°, 73°; Madison, 20°, 76°. *Iowa*—Tabor, 10°, 72°; Logan, 15°, 85°; Davenport, 23°, 80°. *Nebraska*—Sidney Banks, 0°, 83°; Ft. McPherson, 10°, 87°; Omaha, 15°, 81°. *Indian Territory*—Ft. Sill, 19°, 92°; Ft. Gibson, 25°, 86°. *Minnesota*—St. Anthony, 11°, 72°; Breckenridge, 12°, 79°; Duluth, 8°, 64°. *Dakota*—Pembina, 6°, 74°; Ft. Stevenson, 8°, 78°; Yankton, 12°, 83°; Bismarck, 6°, 70°. *Colorado*—Summit, 4°, 50°; Ft. Lyon, 8°, 88°; Denver, 10°, 83°. *Wyoming*—Fort Fred. Steele, -8°, 70°; Cheyenne, -4°, 73°. *Utah*—Salt Lake City, 22° 78°. *Nevada*—Pioche, 19°, 79°; Winnenucca, 10° 77°. *California*—Visalia, 39°, 88°; Los Angeles, 43°, 91°; San Francisco, 51°, 78°; Red Bluff, 48°, 91°. *New Mexico*—Ft. Union, 7°, 79°; Santa Fe, 18°, 85°. *Idaho*—Boise City, 19°, 74°. *Montana*—Virginia City, 9°, 64°.

Ranges of Temperature.—The monthly ranges will appear from an examination of the maxima and